SEQUENCE LISTING

<110> FUTAMURA, MANABU
       YOU, MING
       ZHANG, ZHONGQIU

<120> GENE EXPRESSION AND POLYMORPHISMS ASSOCIATED WITH LUNG
       CANCER

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<140> 10/595,571
<141> 2006-04-27

<150> PCT/US04/35690
<151> 2004-10-27

<150> 60/514,673
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<170> PatentIn Ver. 3.3

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        35                  40                  45

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    50                  55                  60

Arg Asn Glu Glu Leu Glu Glu Leu Tyr Leu Leu Glu Arg Cys Phe Pro
65                  70                  75                  80

Glu Ala Glu Lys Leu Lys Gln Glu Thr Lys Leu Leu Ser Gln Trp Lys
                85                  90                  95

His Tyr Ile Gln Cys Asp Gly Ser Pro Asp Pro Ser Val Ala Gln Glu
            100                 105                 110

Met Asn Thr Phe Ile Ser Leu Trp Lys Glu Lys Thr Asn Glu Thr Phe
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Thr Leu Ala Asp Leu Asp Ser Gly Asn Met Glu Lys Val Ile Lys Asp
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Glu Asn Val Thr Leu Tyr Val Trp Ala Asn Leu Lys Lys Asn Pro Arg
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His Arg Ser Val Arg Phe Ser Glu Thr Gln Ile Gly Phe Glu Ile Pro
225             230             235             240

Arg Ile Leu Ala Thr Ser Asp Ile Ala Val Arg Leu Leu His Thr His
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Tyr Asp His Val Ser Ala Leu His Pro Val Ser Thr Pro Ser Lys Glu
            260             265             270

Tyr Thr Ser Ala Val Thr Glu Leu Val Lys Asp Asp Val Lys Asn Val
            275             280             285

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    290             295             300

Arg Gly Ser His Leu Ile Gln Glu Glu Glu Ile Lys Val Glu Glu Glu
305             310             315             320

Gln Gly Asp Ile Glu Val Lys Met Ser Ser Ala Glu Glu Glu Ser Glu
            325             330             335

Ala Ile Lys Cys Glu Arg Glu Met Lys Val Leu Ser Glu Thr Val Ser
            340             345             350

Ala Ala Gln Leu Leu Leu Val Glu Asn Ser Ser Glu Lys Pro Asp Phe
            355             360             365

Phe Glu Asp Asn Val Val Asp Leu Cys Gln Phe Thr Thr Leu Gly Gly
    370             375             380

Val Tyr His Leu Asp Ile Leu Glu Leu Pro Pro Gln Cys Lys Pro Val
385             390             395             400

Lys Gly Trp Met Ile Val Glu Ile Leu Lys Glu Gly Leu Gln Lys Tyr
            405             410             415

Thr Tyr Pro Pro Glu Thr Thr Glu Glu Phe Glu Thr Glu Asn Ala Phe
            420             425             430

Pro Pro Ile Glu Val Thr Leu Glu Val His Glu Asn Val Ile Phe Phe
    435             440             445
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Glu Asp Pro Val Val Val Arg Trp Asp Ala Glu Gly Lys His Trp Arg
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Thr Asp Gly Ile Ser Asn Val Ser Tyr Lys Pro Lys Glu Arg Leu Val
465   470   475   480

Thr Phe Ser Leu Asp Thr Phe Gly Pro Val Thr Leu Ile Gln Asp Ala
            485   490   495

His Ile Asn Met Pro Tyr Gln Ser Trp Glu Leu Arg Pro Leu Asp Val
            500   505   510

Asn Lys Val Leu Leu Thr Val Thr Thr Val Phe Thr Glu Ile Gln Ile
        515   520   525

Gln Ile Lys Glu Asn Leu Cys Met Leu Ser Ser Ile Lys Leu Lys Asp
    530   535   540

Lys Lys His Ile Ser Ile Leu Glu Gly Thr Trp Met Thr Pro Ile Pro
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Phe Ile Ile Ala Leu Lys Glu Ala Gly Leu Asn Ile Phe Pro Thr Arg
            565   570   575

His Ser His Phe Tyr Val Ile Ile Asn Asn Lys Val Pro Leu Val Glu
            580   585   590

Val Lys Ala Tyr Arg Gln Met Ala Leu Leu Ser Ser Ala Phe Ala Phe
        595   600   605

Gly Trp Ser Lys Trp Asn Leu Leu Cys Asn Ser Thr Lys Val Val Phe
    610   615   620

Lys Val Arg Glu His Leu Thr Glu Glu Cys Thr Glu Asn Pro Asn Trp
625   630   635   640

Ala Leu Leu Met Phe Ser Gly Asp Arg Ala Gln Arg Leu Lys Ile Lys
            645   650   655

Glu Glu Ser Glu Ala Phe Ser Glu Ala Leu Lys Glu Glu Thr Glu Phe
            660   665   670

His Ser Thr Leu Tyr His Met Val Lys Asp Phe Ala Ser Glu Glu Ala
        675   680   685

Met Glu Lys Val Arg Ser Ser Asn Cys Gln Phe Val Asn Ser Val Cys
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705   710   715

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Glu Glu Glu Glu Ala Arg Leu Lys Phe Glu Lys Glu Glu Gln Glu Arg
          35                  40                  45


Leu Glu Ile Gln Arg Ile Glu Arg Glu Lys Trp Asn Leu Leu Glu Lys
       50                  55                  60
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Lys Asp Leu Glu Arg Arg Ser Gln Glu Leu Glu Glu Leu Ala Leu Leu
65                      70              75                      80

Glu Gly Cys Phe Pro Glu Ala Glu Lys Gln Lys Arg Glu Ile Arg Ala
                85              90                      95

Leu Ala Gln Trp Lys His Tyr Thr Glu Cys Asp Gly Ser Pro Asp Pro
                100             105                 110

Trp Val Ala Gln Glu Met Asn Thr Phe Ile Ser Leu Trp Glu Glu Glu
            115             120                 125

Lys Asn Gln Ala Phe Glu Gln Val Met Glu Lys Ser Lys Leu Val Leu
        130             135                 140

Ser Leu Ile Glu Lys Val Lys Leu Ile Leu Leu Glu Thr Pro Thr Tyr
145                 150             155                     160

Glu Leu Asp His Arg Thr Val Leu Gln His Gln Gly Ser Ile Leu Arg
                165             170                 175

Leu Gln Glu Leu Leu Ser Leu Lys Ile Asn Val Ala Thr Glu Leu Leu
            180             185                 190

Leu Arg Gln Ala Ser Asn Leu Ala Asp Leu Asp Thr Gly Asn Met Glu
        195             200             205

Lys Ile Ile Lys Asp Glu Asn Val Thr Leu Tyr Val Trp Ala Asn Leu
        210             215                 220

Lys Lys Asn Pro Arg His Arg Ser Val Arg Phe Ser Glu Thr Gln Ile
225                 230                 235                     240

Gly Phe Glu Ile Pro Arg Ile Leu Ala Thr Ser Asn Val Ala Leu Arg
                245             250                 255

Leu Leu His Thr Arg Tyr Asp His Ile Thr Pro Leu Phe Pro Ile Ala
            260             265                 270

Val Thr Glu Gln Asn Gln Asn Pro Val Gly Ala Glu Gln Val Asn Val
            275             280                 285

Glu Glu Ser Thr Glu Lys Ala Met Thr Glu Glu Lys Leu Phe Thr Glu
    290             295                 300

Glu Lys Ala Ala Asn Glu Asp Glu Gln Pro Lys Ala Glu Gln Glu Arg
305                 310             315                     320

Glu Leu Asn Leu Val Gln Glu Glu Asn Lys Tyr Glu Ala Ile Glu Asn
                325             330                 335

Thr Val Leu Gln Arg Thr Ser Asp Ser Glu Gly Glu Asp Ser Gln Thr
            340             345                 350

Thr Gln Leu Glu Leu Glu Met Lys Leu Leu Ser Glu Ala Val Leu Ala
            355             360                 365
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Ala Gln Leu Cys Leu Val Glu Asn Val Val Glu Leu Pro Glu Ala Ser
    370             375             380

Gln Ala Tyr Lys Val Asp Leu Cys His Phe Ser Thr Leu Gly Gly Val
385             390             395             400

Tyr His Leu Asp Val Leu Glu Leu Pro Pro Gln Cys Lys Pro Val Lys
                405             410             415

Gly Trp Val Leu Val Glu Ile Leu Gln Glu Gly Leu Gln Arg Phe Ile
        420             425             430

Tyr Pro Pro Asp Thr Thr Glu Glu Pro Asp Pro Asp Val Thr Phe Pro
        435             440             445

Pro Ile Glu Val Thr Leu Glu Ile His Lys Ser Val Ile Phe Phe Glu
    450             455             460

Arg Pro Arg Val Val Arg Trp Asp Asn Glu Gly Lys Phe Trp Arg Ser
465             470             475             480

Asp Gly Ile Ser Ser Val Tyr Tyr Asn Arg Glu Asp Arg Leu Leu Thr
            485             490             495

Phe Ser Met Asp Thr Leu Gly Pro Val Thr Leu Ile Gln Asp Ala His
        500             505             510

Val Asn Met Pro Tyr Gln Ser Trp Glu Met Ser Pro Cys Gly Met Asn
        515             520             525

Lys Val Leu Leu Ile Val Lys Thr Val Phe Met Glu Leu Gln Ile Tyr
    530             535             540

Ile Lys Glu Asn Leu Cys Met Leu Ala Ser Val Lys Leu Arg Gly Lys
545             550             555             560

Gly Leu Glu Phe His Leu Lys Gly Lys Trp Met Ala Pro Ile Pro Phe
            565             570             575

Ile Leu Ala Leu Lys Glu Ala Gly Leu Asn Ile Phe Pro Ala Val Tyr
            580             585             590

Ser His Phe Tyr Val Val Ile Asn Asn Lys Val Pro Gln Val Glu Leu
        595             600             605

Lys Ala Tyr Arg Gln Met Ala Leu Leu Ser Ser Ala Phe Ser Phe Gly
    610             615             620

Trp Ser Lys Trp Asn Met Val Cys Asn Ser Thr Arg Val Val Ile Arg
625             630             635             640

Val Arg Glu Gln Leu Ser Glu Glu Thr Glu His His Thr Trp Ser Leu
            645             650             655

Leu Met Phe Ser Gly Asp Arg Ala Gln Met Leu Lys Met Gln Glu Glu
        660             665             670
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Asn Asp Lys Phe Ser Glu Ala Leu Arg Glu Gly Thr Glu Phe His Ser
     675   680   685

Thr Leu Tyr His Met Met Lys Asp Phe Ala Ser Pro Val Ala Met Glu
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Glu Arg

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<400> 9
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 1               5                  10                      15

Asn Val


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<210> 14
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Glu Glu Glu Glu Ala Arg Leu Lys Phe Glu Lys Glu Glu Gln Glu Arg
        35                  40                  45

Leu Glu Ile Gln Arg Ile Glu Arg Glu Lys Trp Xaa Leu Leu Glu Lys
    50                  55                  60

Lys Asp Leu Glu Arg Arg Ser Gln Glu Leu Glu Glu Leu Ala Leu Leu
65                  70                  75                  80

Glu Gly Cys Phe Pro Glu Ala Glu Lys Gln Lys Arg Glu Ile Arg Ala
                85                  90                  95

Leu Ala Gln Trp Lys His Tyr Thr Glu Cys Asp Gly Ser Pro Asp Pro
            100                 105                 110

Trp Val Ala Gln Glu Met Asn Thr Phe Ile Ser Leu Trp Glu Glu Glu
            115                 120                 125

Lys Asn Gln Ala Phe Glu Gln Val Met Glu Lys Ser Lys Leu Val Leu
    130                 135                 140

Ser Leu Ile Glu Lys Val Lys Leu Ile Leu Leu Glu Thr Pro Thr Tyr
145                 150                 155                 160

Glu Leu Asp His Arg Thr Val Leu Gln His Gln Gly Ser Ile Leu Arg
                165                 170                 175

Leu Gln Glu Leu Leu Ser Leu Lys Ile Asn Val Ala Thr Glu Leu Leu
            180                 185                 190

Leu Arg Gln Ala Ser Asn Leu Ala Asp Leu Asp Thr Gly Asn Met Glu
            195                 200                 205

Lys Ile Ile Lys Asp Glu Asn Val Thr Leu Tyr Val Trp Ala Asn Leu
    210                 215                 220

Lys Lys Asn Pro Arg His Arg Ser Val Arg Phe Ser Glu Thr Gln Ile
225                 230                 235                 240
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Gly Phe Glu Ile Pro Arg Ile Leu Ala Thr Ser Asn Val Ala Leu Arg
            245   250   255

Leu Leu His Thr Arg Tyr Asp His Ile Thr Pro Leu Phe Pro Ile Ala
            260   265   270

Val Thr Glu Gln Asn Gln Asn Pro Val Gly Ala Glu Gln Val Asn Val
            275   280   285

Glu Glu Ser Thr Glu Lys Ala Met Thr Glu Glu Lys Leu Phe Thr Glu
    290   295   300

Glu Lys Ala Ala Asn Glu Asp Glu Gln Pro Lys Ala Glu Gln Glu Arg
305   310   315   320

Glu Leu Asn Leu Val Gln Glu Glu Asn Lys Tyr Glu Ala Ile Glu Asn
            325   330   335

Thr Val Leu Gln Arg Thr Ser Asp Ser Glu Gly Glu Asp Ser Gln Thr
            340   345   350

Thr Gln Leu Glu Leu Glu Met Lys Leu Leu Ser Glu Ala Val Leu Ala
            355   360   365

Ala Gln Leu Gln Leu Val Glu Asn Val Val Glu Leu Pro Glu Ala Ser
    370   375   380

Gln Ala Tyr Lys Val Asp Leu Cys His Phe Ser Thr Leu Gly Gly Val
385   390   395   400

Tyr His Leu Asp Val Leu Glu Leu Pro Pro Gln Cys Lys Pro Val Lys
            405   410   415

Gly Trp Val Leu Val Glu Ile Leu Gln Glu Gly Leu Gln Arg Phe Ile
            420   425   430

Tyr Pro Pro Asp Thr Thr Glu Glu Pro Asp Pro Asp Val Thr Phe Pro
            435   440   445

Pro Ile Glu Val Thr Leu Glu Ile His Lys Ser Val Ile Phe Phe Glu
    450   455   460

Arg Pro Arg Val Val Arg Trp Asp Asn Glu Gly Lys Phe Trp Arg Ser
465   470   475   480

Asp Gly Ile Ser Ser Val Tyr Tyr Asn Arg Glu Asp Arg Leu Leu Thr
            485   490   495

Phe Ser Met Asp Thr Leu Gly Pro Val Thr Leu Ile Gln Asp Ala His
            500   505   510

Val Asn Met Pro Tyr Gln Ser Trp Glu Met Ser Pro Gln Gly Met Asn
            515   520   525

Lys Val Leu Leu Ile Val Lys Thr Val Phe Met Glu Leu Gln Ile Tyr
            530   535   540

Ile Lys Glu Asn Leu Cys Met Leu Ala Ser Val Lys Leu Arg Gly Lys
545   550   555   560

Gly Leu Glu Phe His Leu Lys Gly Lys Trp Met Ala Pro Ile Pro Phe
               565   570   575

Ile Leu Ala Leu Lys Glu Ala Gly Leu Asn Ile Phe Pro Ala Val Tyr
               580   585   590

Ser His Phe Tyr Val Val Ile Asn Asn Lys Val Pro Gln Val Glu Leu
          595   600   605

Lys Ala Tyr Arg Gln Met Ala Leu Leu Ser Ser Ala Phe Ser Phe Gly
          610   615   620

Trp Ser Lys Trp Asn Met Val Cys Asn Ser Thr Arg Val Val Ile Arg
625   630   635   640

Val Arg Glu Gln Leu Ser Glu Glu Thr Glu His His Thr Trp Ser Leu
               645   650   655

Leu Met Phe Ser Gly Asp Arg Ala Gln Met Leu Lys Met Gln Glu Glu
          660   665   670

Asn Asp Lys Phe Ser Glu Ala Leu Arg Glu Gly Thr Glu Phe His Ser
          675   680   685

Thr Leu Tyr His Met Met Lys Asp Phe Ala Ser Pro Val Ala Met Glu
          690   695   700

Arg Val Arg His Ser Asn Cys Gln Phe Ile Asp Ser Val Cys Tyr Met
705   710   715   720

Leu Leu Ser Ile Arg Val Leu Ser Tyr Ser
               725   730

<210> 22
<211> 716
<212> PRT
<213> Homo sapiens

<220>
<221> MOD_RES
<222> (185)
<223> Variable amino acid

<400> 22
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Leu Leu Gln Glu Glu Glu Glu Arg Arg Leu Lys Glu Glu Glu Glu Ala
               20   25   30

Arg Leu Lys Tyr Glu Lys Glu Glu Met Glu Arg Leu Glu Ile Gln Arg
          35   40   45

Ile Glu Lys Glu Lys Trp His Arg Leu Glu Ala Lys Asp Leu Glu Arg
    50   55   60

Arg Asn Glu Glu Leu Glu Glu Leu Tyr Leu Leu Glu Arg Cys Phe Pro
65   70   75   80

Glu Ala Glu Lys Leu Lys Gln Glu Thr Lys Leu Leu Ser Gln Trp Lys
            85   90   95

His Tyr Ile Gln Cys Asp Gly Ser Pro Asp Pro Ser Val Ala Gln Glu
          100   105   110

Met Asn Thr Phe Ile Ser Leu Trp Lys Glu Lys Thr Asn Glu Thr Phe
          115   120   125

Glu Glu Val Ile Glu Lys Ser Lys Val Val Leu Asn Leu Ile Glu Lys
      130   135   140

Leu Lys Phe Ile Leu Leu Glu Thr Pro Pro Cys Asp Leu Gln Asp Lys
145   150   155   160

Asn Ile Ile Gln Tyr Gln Glu Ser Ile Leu Gln Leu Gln Glu Leu Leu
            165   170   175

His Leu Lys Phe Gly Val Ala Thr Xaa Ile Leu Leu Lys Gln Ala Ser
          180   185   190

Thr Leu Ala Asp Leu Asp Ser Gly Asn Met Glu Lys Val Ile Lys Asp
          195   200   205

Glu Asn Val Thr Leu Tyr Val Trp Ala Asn Leu Lys Lys Asn Pro Arg
      210   215   220

His Arg Ser Val Arg Phe Ser Glu Thr Gln Ile Gly Phe Glu Ile Pro
225   230   235   240

Arg Ile Leu Ala Thr Ser Asp Ile Ala Val Arg Leu Leu His Thr His
            245   250   255

Tyr Asp His Val Ser Ala Leu His Pro Val Ser Thr Pro Ser Lys Glu
          260   265   270

Tyr Thr Ser Ala Val Thr Glu Leu Val Lys Asp Asp Val Lys Asn Val
          275   280   285

Glu Lys Ala Ile Ser Lys Glu Val Glu Glu Glu Ser Lys Gln Gln Glu
      290   295   300

Arg Gly Ser His Leu Ile Gln Glu Glu Glu Ile Lys Val Glu Glu Glu
305   310   315   320

Gln Gly Asp Ile Glu Val Lys Met Ser Ser Ala Glu Glu Glu Ser Glu
            325   330   335

Ala Ile Lys Cys Glu Arg Glu Met Lys Val Leu Ser Glu Thr Val Ser
          340   345   350

Ala Ala Gln Leu Leu Leu Val Glu Asn Ser Ser Glu Lys Pro Asp Phe
    355   360   365

Phe Glu Asp Asn Val Val Asp Leu Cys Gln Phe Thr Thr Leu Gly Gly
    370   375   380

Val Tyr His Leu Asp Ile Leu Glu Leu Pro Pro Gln Cys Lys Pro Val
385   390   395   400

Lys Gly Trp Met Ile Val Glu Ile Leu Lys Glu Gly Leu Gln Lys Tyr
            405   410   415

Thr Tyr Pro Pro Glu Thr Thr Glu Glu Phe Glu Thr Glu Asn Ala Phe
            420   425   430

Pro Pro Ile Glu Val Thr Leu Glu Val His Glu Asn Val Ile Phe Phe
        435   440   445

Glu Asp Pro Val Val Val Arg Trp Asp Ala Glu Gly Lys His Trp Arg
    450   455   460

Thr Asp Gly Ile Ser Asn Val Ser Tyr Lys Pro Lys Glu Arg Leu Val
465   470   475   480

Thr Phe Ser Leu Asp Thr Phe Gly Pro Val Thr Leu Ile Gln Asp Ala
            485   490   495

His Ile Asn Met Pro Tyr Gln Ser Trp Glu Leu Arg Pro Leu Asp Val
            500   505   510

Asn Lys Val Leu Leu Thr Val Thr Thr Val Phe Thr Glu Ile Gln Ile
        515   520   525

Gln Ile Lys Glu Asn Leu Cys Met Leu Ser Ser Ile Lys Leu Lys Asp
    530   535   540

Lys Lys His Ile Ser Ile Leu Glu Gly Thr Trp Met Thr Pro Ile Pro
545   550   555   560

Phe Ile Ile Ala Leu Lys Glu Ala Gly Leu Asn Ile Phe Pro Thr Arg
            565   570   575

His Ser His Phe Tyr Val Ile Ile Asn Asn Lys Val Pro Leu Val Glu
            580   585   590

Val Lys Ala Tyr Arg Gln Met Ala Leu Leu Ser Ser Ala Phe Ala Phe
        595   600   605

Gly Trp Ser Lys Trp Asn Leu Leu Cys Asn Ser Thr Lys Val Val Phe
    610   615   620

Lys Val Arg Glu His Leu Thr Glu Glu Cys Thr Glu Asn Pro Asn Trp
625   630   635   640

Ala Leu Leu Met Phe Ser Gly Asp Arg Ala Gln Arg Leu Lys Ile Lys
            645   650   655

Glu Glu Ser Glu Ala Phe Ser Glu Ala Leu Lys Glu Glu Thr Glu Phe
        660   665   670

His Ser Thr Leu Tyr His Met Val Lys Asp Phe Ala Ser Glu Glu Ala
        675   680   685

Met Glu Lys Val Arg Ser Ser Asn Cys Gln Phe Val Asn Ser Val Cys
    690   695   700

His Met Leu Leu Ser Thr Arg Leu Leu Ser Tyr Ser
705   710   715

<210> 23
<211> 737
<212> PRT
<213> Ciona intestinalis

<400> 23
Met Pro Pro Lys Ser Pro Asn Arg Ser Gly Lys Ser Thr Pro Thr Arg
  1   5   10   15

Gly Arg Pro Gly Glu Lys Lys Asp Glu Glu Lys Leu Leu Gln Asp Glu
        20   25   30

Glu Glu Glu Arg Leu Arg Leu Glu Gln Glu Glu Lys Ala Arg Gln Glu
      35   40   45

Lys Glu Ala Arg Glu Lys Leu Glu Gln Glu Arg Arg Ala Glu Leu Asp
    50   55   60

Thr Lys Lys Asp Lys Gln Val Phe Glu Thr Asn Ile Glu Leu Gly Ala
 65   70   75   80

Val Lys Leu Glu Val Glu Gln Val Lys Asn Asp Lys Leu Ala His Ala
        85   90   95

Glu Trp Asn Arg Tyr Met Lys Cys Asp Gly Lys Pro Asp Pro Thr Ser
        100   105   110

Val Lys Glu Ile Asn Thr Phe Ile Ser Leu Ser His Glu Lys Gly Ser
      115   120   125

Pro Asp Val Asn Ile Val Leu Glu Asp Ala Lys Leu Ile Leu Ser Leu
    130   135   140

Ile Ser Asp Leu Asn Glu Leu Leu Glu Asp Phe Thr Pro Glu Glu Phe
145   150   155   160

Glu Gln Lys Val Asp Ser Tyr Arg Gln Thr Ile Leu Ser Leu Gln Asp
        165   170   175

Leu Leu Leu Asn Arg Tyr Asn Glu Ala Thr Leu Lys Met Leu Lys Glu
        180   185   190

Ala Ser Tyr Glu Ala Asp Ser Glu Ser Gly Asn Leu Gln Lys Val Val
      195   200   205

Asp Gly Glu Asn Glu Thr Ile Met Leu Trp Ala Asn Leu Asn Lys Asn
    210   215   220

Pro Arg Phe Lys Leu Phe Glu Phe Glu Asn Glu Lys Ile Ser Phe Glu
225   230   235   240

Leu Pro Lys Val Leu Ala Met Ala Asp Ile Ala Val Arg Ile Leu Arg
            245   250   255

Thr Lys Phe Asp His Tyr Ser His Gln Cys Thr Thr Phe Leu Pro Lys
            260   265   270

Lys Lys Lys Val Lys Asp Glu Glu Pro Ile Pro Glu Glu Pro Pro Lys
        275   280   285

Pro Glu Asp Ala Glu Glu Val Glu Val Lys Gly Asp Glu Glu Asn Gly
    290   295   300

Glu Asp Ala Lys Ser Val Val Glu Glu Gly Arg Gln Ser Lys Gln Ser
305   310   315   320

Asn Glu Pro Gly Leu Val Asn Glu Gly Glu Lys Glu Glu Glu Thr Lys
            325   330   335

Lys Asp Glu Asn Glu Gly Glu Lys Glu Asp Ala Val Lys Thr Pro Asp
            340   345   350

Val Gln Ile Glu Ile Glu Asp Asp Glu Glu Glu Ile Leu Asp Pro Asp
            355   360   365

Val Val Asp Leu Arg Gln Phe Ser Pro Leu Gly Gly Val Tyr His Val
    370   375   380

Asp Leu Leu Lys Thr Pro Pro Gln Pro Asn Ile Val Arg Gly Trp Thr
385   390   395   400

Leu Thr Gln Ile Ile Asp Lys Pro Leu Ser Thr Val Lys Tyr Pro Ser
            405   410   415

Asp Asn Pro Asn Thr Gly Arg Ser Ser Ser Arg Val Ala Ser Ala Asn
            420   425   430

Pro Glu Gly Arg Asp Glu Gly Ser Pro Ser Lys Thr Pro Leu Glu Gln
        435   440   445

Gln Gln Pro Pro Ile Gly Leu Thr Phe Ala Leu Pro Ser Asn Val Met
        450   455   460

Phe Phe Glu Glu Pro Gln Val Ala Ser Trp Asp Ser Ser Asp Lys His
465   470   475   480

Trp Lys Thr Ser Gly Ile Thr Asp Thr Asn Phe Asp Glu Glu Asn Arg
            485   490   495

Lys Leu Leu Phe Lys Thr Gln Glu Phe Gly Thr Phe Cys Leu Met Gln
        500   505   510

Asp Ser His Leu Asn Met Pro Phe Gln Ser Trp Glu Leu Lys Pro Lys
        515   520   525

Gly Thr Asn Ser Thr Val Leu Thr Ile Thr Ala Ala Ile Ala Glu Val
        530   535   540

Glu Ile Glu Val Lys Asp Ser Lys Cys Arg Leu Asn Ala Pro Ala Glu
545   550   555   560

Asp Pro Pro Lys Glu Leu Ser Gly Leu Tyr Gly Lys Trp Met Ala Val
            565   570   575

Pro Lys Leu Ile Ala Ala Met Arg Asp Ala Gly Val Asn Val Phe Pro
            580   585   590

Ala Glu Asp Ser His Lys Phe Val Ser Ile Gln Ser Lys Glu Val Asp
            595   600   605

Leu Glu Arg Val Tyr Glu Gln Met Ala Ile Leu Ser Ser Thr Phe Ala
        610   615   620

Phe Ser Trp Ser Lys Trp Asn Asn Asp Ala Gly Ser Lys Gln Val Ile
625   630   635   640

Ile Gln Ile Ala Pro Cys Leu Ile Lys Glu Asn Val Pro Arg Asp Ala
            645   650   655

Val Ser Asp Asp Asp Trp Ser Ile Phe Ser Val Ser Asp Asp Met Ser
            660   665   670

Tyr Lys Leu Ala Leu Ser Glu Tyr Asp Glu Glu Phe Ala Asp Val Val
        675   680   685

Ala Lys Gly Ala Thr Tyr His Cys Asp Leu Leu His Ala Gln Tyr Glu
        690   695   700

Arg Gln Pro Leu Lys Thr Ala Thr Lys Asn Cys Trp Asn Asn Ser Pro
705   710   715   720

Lys Asn His Lys Thr Arg Thr Ser Phe Ser Phe Thr Arg Leu Pro His
            725   730   735

Tyr

<210> 24
<211> 229
<212> PRT
<213> Rattus sp.

<400> 24
Met Gly Pro Val Thr Leu Ile Gln Asp Ala His Val Asn Met Pro Tyr
  1   5   10   15

Gln Ser Trp Glu Leu Ser Pro Leu Gly Met Asn Lys Ala Leu Leu Met
            20   25   30

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Val Thr Thr Val Phe Ile Glu Leu Gln Ile His Ile Lys Glu Thr His
         35                40                45

Cys Met Leu Ala Ala Val Lys Leu Lys Gly Lys Ser Arg Glu Leu Arg
     50                55                60

Val Ile Gly Lys Trp Met Thr Pro Ile Pro Phe Ile Leu Ala Leu Lys
65                70                75                        80

Glu Ala Gly Leu Asn Ile Phe Pro Ala Val Tyr Ser His Phe Tyr Val
             85                90                    95

Val Val Asn Asn Lys Asn Pro Gln Met Glu Leu Lys Ala Tyr Arg Gln
            100               105               110

Met Ala Leu Leu Ser Ser Ala Phe Ser Phe Gly Trp Ser Lys Trp Asn
         115               120               125

Met Val Cys Asn Ser Thr Arg Val Val Phe Arg Val Arg Glu His Ile
     130               135               140

Ser Glu Glu Glu Glu Gln Asn Thr Trp Ala Leu Leu Met Phe Ser Gly
145               150               155               160

Asp Arg Ala Gln Met Leu Lys Met Gln Glu Glu Ser Asp Gln Phe Ser
             165               170               175

Glu Thr Leu Arg Glu Gly Ser Glu Phe His Ser Thr Leu Tyr His Met
             180               185               190

Met Lys Asp Phe Ala Ser Pro Glu Ala Thr Glu Lys Val Arg His Ser
         195               200               205

Asn Cys Gln Phe Ile Asp Ser Val Cys Tyr Met Leu Leu Ser Val Arg
     210               215               220

Val Leu Ser Tyr Ser
225
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<400> 25
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tcataagagt gagcactcca ttgctttctt tcctggccac actgctacaa tccagcacta  180
actatccatg tccagggtaa ggatcgagat cgagaagccc acactgccag tgaaaaagct  240
acgtctttac tgcataaatt agaggaagca atttcggaac aacggaacct tcaaactata  300
aatactgaat tatcgaacac ttgccaggca cttcagcaga agacaaggaa actgaagaag  360
cttttagat gaggaatttc ctcactatga ttccctgtcc tgcgcagatg caattcaaca  420
acctcttcaa gaaaaattga agcagtgttg ccacaaacta tatggtggtc aagaagcaag  480
aatacatcag acacccctga ccttgaaaca tacgtgctgg tacacacctc tgctggatgc  540
cttatctctg gatagtttta cagcagttcc aaccctggaa tcaacacctt tctcaggtgt  600
agccaaccaa atccacactc tgtgtgaaag gcccacatat ggagaagtaa aggatggtgc  660
tttggatgta aaaagacaac acaagtgccc aggccccaca agtggcccca gcccaggaac  720
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gaatctctca ggctgcatca ggatgaatga tgacccaagt atggaagaga atggtgttga 780
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acacacttca tcgacagacg gtactataac ttcaagtgat cctggattag aaattctgaa 900
tatggcttct tgtgaccttg acagaaactc gctctgtaag aaagaggagg atacaagatc 960
agcttctccc acgatagagg cccaaggcac aagtccagct catgataata ttgcattcca 1020
agactctacg agtaaggata aaaccatatt aaatctggaa gccaaagagg aaccagaaac 1080
aatagaagaa cataaaaaag aacatgcttc aggagactct gtggtttccc ctcttcctgt 1140
aaccactgtg aaatcggtta acgttagaca aagtgagaac acttctgcta atgagaagga 1200
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gaagagagtg aagcttgaag agaggtcccg tgactgggca gaagaaaatt tgaagaaaga 1320
aatcactaac tctttaaaac tattagagtc tttaacacct ctgtgtgaag atgacaacca 1380
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agcagttgaa gtgatgattc agcacgtaga aaacttgaag aggatgtatg ccaaagagca 1560
cgctgaatta gaagaactga aacaggttct tctgcagaat gaaaggtctt tcaatcctct 1620
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gtgggatgtc tcttcagttt atgacacaat agcttcctgg gcaacaaatc tcaagtcctc 2040
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caatgggcca ccaccagtgt gacagcagga catcctaata tatggatctt gatttttaag 2280
tttcagtatc tgaacttcgt aaaattagtaa cttttagctg ggaaagtata gcatgaaacc 2340
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aactaaaata caatggg                                              2417
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<210> 26
<211> 2263
<212> DNA
<213> Mus sp.

<400> 26
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tacgcttatc atttccgtga gaagaaaagc atatttccag tttcctgtgc ctaagaacaa 120
gcatccagcg cccttcccgc ggctcaaacc caggctgacc tgtgcatatg ggtcaggggg 180
atcaggatgg ggcctgcgca tgaggcaagc ctctgctaca gaactagag gaagcgattc 240
cagaaggaga tcacagtccc cagcactact cagactcagg agctgaagac cagggggcgtt 300
cagtatgcct gtgtcttgac ggcctcacag caattccaag gctagaactg acacccatct 360
catgtgccag aaactcagcc catgctctgt gtaaaaggtc ccccagagca ggaaccagaa 420
gatggggctt tggacgtgac aagagggtgc cagtgcccac tccccacgga aggctccatc 480
ttgggacagg agcttctaga ctgtaccaga atgaacgagg accagagtac agacgagaat 540
ggtgctgacc acttgtattc cgagagcccg tcacagctca gggagtatct cacacagcca 600
tcgtctgaac agacttcatc ctcggagagc actgtgacgt caagtgagtc tggatcagac 660
attttgcaca tggcttctgg tgaccttgac tgcaaacctc tctgtgagaa ggaggaggaa 720
gcaagagccg cctctgccat gcaaggcacc agcctagctc ctgctgctta tggagactac 780
acgagtgtgg gcgtggccaa ggctgcatcc cagctggaag caggagagga actcagaacc 840
acagaaaacg gagggaaggg cagtgccccg ggagagacgg agatttccat gcccccaaa 900
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atcacaaact gtttaaagct tttagagtcg ctgactcccc tgtgtgaaga ggacaaccag 1140
gctcaggaaa tcgttaagaa gctggagaag agtatagtac tgctcagcca gtgcacagcc 1200
cgagtggcca gcaggctga gatgctgggc gccatcaacc aggaaagccg ggtgagtaga 1260
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gcggtggagg tgatgatcca gcacgtggag aacctgaagc ggatgtacgc caaagagcac 1320
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acaaagcagg gtgagcaccg cccctcgctg catcgcttca tcagcaccta ttcctgggcc 1620
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ctgatgagct tcctcacagg tcagctcttc cagacagccg tggaggctgc gcccacacag 1920
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gatggaccac tgccagtgtg actgacgtgc agctcaatgt acccttggat tttaacgttt 2040
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ctcagcagct gggatctttt tattccccaa caaaagcaca ggggactaca aaagggaggg 2160
gaccccacct agggtatttt aatgagcttt ctgagtgaga ggcatcagac tttattgaga 2220
tgtatccaaa taaagaccat tcaaatctta aaaaaaaaaa aaa              2263
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<210> 27
<211> 1155
<212> DNA
<213> Homo sapiens
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<400> 27
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gaccccaata atctggtttt tggaactgtg ttcacggatc atatgctgac ggtggagtgg 180
tcctcagagt ttggatggga gaaacctcat atcaagcctc ttcagaacct gtcattgcac 240
cctggctcat cagctttgca ctatgcagtg gaattatttg aaggattgaa ggcatttcga 300
ggagtagata taaaaattcg actgtttcag ccaaacctca acatggatag aatgtatcgc 360
tctgctgtga gggcaactct gccggtattt gacaagaag agctcttaga gtgtattcaa 420
cagcttgtga aattggatca agaatgggtc ccatattcaa catctgctag tctgtatatt 480
cgtcctgcat tcattggaac tgagccttct cttggagtca agaagcctac caaagccctg 540
ctctttgtac tcttgagccc agtgggacct tattttttcaa gtggaacctt taatccagtg 600
tccctgtggg ccaatcccaa gtatgtaaga gcctggaaag gtggaactgg ggactgcaag 660
atgggaggga attacggctc atctcttttt gcccaatgtg aagacgtaga taatgggtgt 720
cagcaggtcc tgtggctcta tggcagagac catcagatca ctgaagtggg aactatgaat 780
ctttttcttt actggataaa tgaagatgga gaagaagaac tggcaactcc tccactagat 840
ggcatcattc ttccaggagt gacaaggcgg tgcattctgg acctggcaca tcagtggggt 900
gaatttaagg tgtcagagag atacctcacc atggatgact tgacaacagc cctggagggg 960
aacagagtga gagagatgtt tagctctggt acagcctgtg ttgtttgccc agtttctgat 1020
atactgtaca aaggcgagac aatacacatt ccaactatgg agaatggtcc taagctggca 1080
agccgcatct tgagcaaatt aactgatatc cagtatggaa gagaagagag cgactggaca 1140
attgtgctat cctga                                          1155
```

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<210> 28
<211> 1161
<212> DNA
<213> Mus sp.
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<400> 28
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aagccggacc cggattcgct ggtctttgga gctacgttta ctgaccacat gctgacggtg 180
gagtggtcct ctgcgtctgg atgggagaaa cctcacatta gcctttttgg aaacttgccc 240
atacatcccg ctgcctctgt tttgcactac gctgtggaac tgtttgaagg cttgaaagcc 300
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```
tttcggggag ttgataacaa gatccgattg ttccggccgg acctcaacat ggatagaatg 360
tgccgatctg ctgtgaggac cacgctgccg atgtttgaca aggaggagct cctaaagtgt 420
attcttcagc ttctacagat cgaccaagaa tgggttccct actccacctc tgccagcctc 480
tacatccgcc ccacatttat cggaactgag ccatctcttg gcgtcaagaa gccttccaaa 540
gccctactct ttgtgatcct gagccccgtg ggaccttatt tttctagtgg atcttttact 600
ccggtgtccc tgtgggccaa tccaaagtac atcagagcct ggaaaggtgg gactggagac 660
tgcaagatgg gcggcaatta tggagcctcc cttctggcac agtgcgaggc cgtggagaat 720
ggctgtcagc aggtcctgtg gctgtacggc aaggacaacc agataactga agtaggcaca 780
atgaatcttt tcctctactg gataaacgaa gacggagaag aggagctggc aacgccccca 840
ctagatggca tcattctccc gggagtgacc aggcagagca tcctggagct ggcacaacag 900
tggggtgaat ttaaggtatg tgagagacac ctcaccatgg atgacctggc caccgccctt 960
gaggggaaca gagtgaagga gatgttcggc tcagggacag cctgcgttgt ctgcccagtc 1020
tctgatattc tgtacaaggg ccagatgctg catattccaa cgatggagaa tggccccaag 1080
cttgcaagtc gaatcctggg aaagctgact gatatccagt atggaagggt ggagagtgac 1140
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<210> 29
<211> 5436
<212> DNA
<213> Homo sapiens

<400> 29
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aaggcggcgg cggggccaga ggctcagcgg ctcccaggtg cgggagagag gcctgctgaa 180
aatgactgaa tataaacttg tggtagttgg agctggtggc gtaggcaaga gtgccttgac 240
gatacagcta attcagaatc attttgtgga cgaatatgat ccaacaatag aggattccta 300
caggaagcaa gtagtaattg atggagaaac ctgtctcttg gatattctcg acacagcagg 360
tcaagaggag tacagtgcaa tgagggacca gtacatgagg actggggagg gctttctttg 420
tgtatttgcc ataaataata ctaaatcatt tgaagatatt caccattata gagaacaaat 480
taaaagagtt aaggactctg aagatgtacc tatggtccta gtaggaaata aatgtgattt 540
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<213> Mus sp.

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